



Ballistic pendulum, analog and digital multimeter, 1 photoelectric sensor

EQ166AJM

### Function

Intended for experimental study, physics laboratory and carrying out physics experiments on: Kinematics. Horizontal launch, range, uncertainty and impact velocity. Measuring launch height and reach. The uncertainty of the range measurement. Decomposing the parabolic motion into two straight motions. Calculating the final resultant velocity, impact velocity. Casting speed from range, in a 45 degree cast. Determination of range and its uncertainty in an oblique launch. The horizontal and vertical components of velocity in an oblique launch. Determining the launch speed in an oblique launch, from the reach. Range as a function of initial velocity, for the same launch angle. The range of a projectile, maintaining initial velocity, as a function of launch angle. The launch range at an angle of  $60^\circ$ , maintaining the same initial velocity. Conservation of mechanical energy. The conservation of mechanical energy in an oblique launch. The horizontal component motion, uniform rectilinear motion (mru). The equation that links the time interval to reach maximum height with launch speed and launch angle. The total movement time range, flight time, time spent in the air. Expression for determining range, regardless of time. Expression for determining the launch velocity module, as a function of range. Determining the maximum height in an oblique launch of the sphere, using conservation of mechanical energy. The speed of the projectile using the ballistic pendulum, fast method. The ballistic pendulum. Determining the velocity of a projectile using the ballistic pendulum. The velocity of the projectile before the collision. Determining the moment of inertia of the pendulum plus

projectile assembly, from the period of oscillation, etc.

Note: External memory device for USB pen drive connection is not included.

## **Knowledge areas**

Physics

## **Level**

Graduation - Technical education

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